

SEQUENCE LISTING

RECEIVED 16 2003

TECH CENTER 1600/29CO

<110> BOYLE, WILLIAM

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<141> 2000-11-21

<150> US 09/052,521

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ggc ggc	Val	cca Pro 25	cac His	gag Glu	ggt Gly	PIO	ctg Leu 30	cac His	ccc Pro	gcg Ala	cct Pro	tct (Ser / 35	gca Ala	ccg Pro	gct Ala	271
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ctc 	acc	ato	: aat	gat Ala	geo Ala	agc Ser	ato - 110	a ada	tog Se:	r Gly	t too 7 Ser	cat.	aaa Lys	gto Val	act Thr	703

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ctg tac gcc aac att tgc ttt cgg cat cat gaa aca tcg gga agc gt Leu Tyr Ala Asn Ile Cys Phe Arg His His Glu Thr Ser Gly Ser Va 215 220 225 23	. 4
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Ile Ala Leu Phe Leu Tyr Phe Arg Ala Gln Met Asp Pro Asn Arg Ile 65 70 75 80

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Ash Ala Gly Leu Gln Asp Ser Thr Leu Glu Ser Glu Asp Thr Leu Pro 100 100

Asp Ser Cys Ard Ard Met Lys Gln Ala Phe Gln diy Ala Val Gln Lyn 115

Glu Leu Gln His Ile Val Gly Pro Gln Arg Phe Ser Gly Ala Pro Ala 130 140

with war only only Ser Tro Lett Asp Mal Ala Glo Ard Gly Lys Pro Glu

Ala Lys Ile Ser Asn Met Thr Leu Ser Asn Gly Lys Leu Arg Val Asn 195 200 205

Gln Asp Gly Phe Tyr Tyr Leu Tyr Ala Asn Ile Cys Phe Arg His His 210 220

Glu Thr Ser Gly Ser Val Pro Thr Asp Tyr Leu Gln Leu Met Val Tyr 225 230 235

Val Val Lys Thr Ser Ile Lys Ile Pro Ser Scr His Asn Leu Met Lys 245 250 255

Gly Gly Ser Thr Lys Asn Trp Ser Gly Asn Ser Glu Phe His Phe Tyr 260 265 270

Ser Ile Asn Val Gly Gly Phe Phe Lys Leu Arg Ala Gly Glu Glu Ile 275 280 285

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Lys	Ala 145	Met	Val	Asp	Gly	Ser 150	Trp) Leu	Asp	, пеа	155	. шуз	. Arg	501	aag Lys	66	
Leu 160	Glu	Ala	. Gln	. Pro	Phe 165	Ala	HIS	s Leu	. Thi	170)	I AIC		115	atc Ile 175	70	
Pro	Ser	Gly	. Ser	180	n LYS	. Vai	. 54,1	1165	181)	1 10 1	, , , ,		1.90		75	
gar Gly	tại Trp	n dek S Ala	· aA(i bys 195	3 1.4	· · gw e Sei	nat As:	i At. I Mes	: Ast : Thr 200		agr • Set	: Aa: Ay:	(1618 (1618)	: aa: : Ly: :20'		i Ata iliu	8(
Va:	. Asr	ı Glr 210	n Asp	o Gl;	y Ph€	э Ту:	21	r Let 5	ı vy:	r Ale	a Mbi	22	е су. О	<i>J</i> 1	c cga e Arg	85	
cat u:	cat His	gaa a Gir	a act	t taa r Se:	a gga r Gly	a gad , As	a at p Le	a gct n Ala	t ace a Th	a gag r Gl	g ta u Ty	t et r Le	t da u Gl:	a cta n Les	a atg u Met	90):

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أخم المحادث والمحادث والمحادث

Asp	Pro	Gly 105	Asn	His	Thr	Ala	Pro 110	Arg	Arg	Cys	Ala	Cys 115	Thr	Ala	Gly	
tac Tyr	cac His 120	tgg Trp	aac Asn	tca Ser	gāc Asp	tgc Cys 125	gag Glu	tgc Cys	tgc Cys	cgc Arg	agg Arg 130	aac Asn	acg Thr	gag Glu	tgt Cys	437
gca Ala 135	cct Pro	ggc Gly	ttc Phe	gga Gly	gct Ala 140	cag Gln	cat Hís	ccc Pro	ttg Leu	cag Gln 145	ctc Leu	aac Asn	aag Lys	gat Asp	acg Thr 150	485
gtg Val	tgc Cys	aca Thr	ccc Pro	tgc Cys 155	ctc Leu	ctg Leu	ggc Gly	t.tc Phe	ttc Phe 160	tca Ser	gat Asp	gtc Val	ttt Phe	teg Ser 155	tec Ser	533
aca Thr	gac Asp	aaa Lys	tgc Cys 170	aaa Lys	cct Pro	tgg Trp	acc Thr	aac Asn 175	tgc Cys	acc Thr	ctc Leu	ctt Leu	gga Gly 180	aag Lys	cta Leu	581
gaa Glu	gca Ala	cac His 185	cag Gln	Gly ggg	aca Thr	acg Thr	gaa Glu 190	tca Ser	gat Asp	gig Val	ytc Val	tgc Cys 195	agc Ser	tot Ser	tod Ser	629
atg Met	aca Thr 200	Leu	agg Arg	aga Arg	cca Pro	ccc Pro 205	aag Lys	gag Glu	gcc Ala	cag Gln	gct Ala 210	- 1 -	ctg Leu	ccc Pro	agt Ser	677
ctc Leu 215	Ile	gtt Val	ctg Leu	ctc Leu	ctc Leu 220	ttc Fhe	atc Ile	tct Ser	gtg Val	gta Val 225	VUI	gtg Val	gct Ala	gcc Ala	atc Ile 230	725
atc Ile	ttc Phe	ggc Gly	gtt Val	tac Tyr 235	Tyr	agg Arg	aag Lys	gga Gly	ggg Gly 240	L K	gcg Ala	ctg Leu	aca Thr	gct Ala 245		773
t t ç Lev	ı tgg ı Trp	aat Asr	tgg Trp 250) Val	: aat . Asn	gat Asp	gat Ala	tgc Cys 255	261	agt Ser	cta Leu	a agt 1 Ser	gga Gly 260		aag Lys	821
gaç Glu	g tad 1 Ser	tea Ser 265	: Gly	gac Asp	c cgt Arg	tgt J Cys	gct Ala 270	r ath	tac Sei	cac His	tcg Ser	g gca Ala 275		t toc Ser	agt Ser	869
Cay	; Cai : Gl: ::28:	; G.	r gtt I Val		Ger G	. gg: : gly :/81		r its h Ler	r 617 Ligher	a Alg i Met	7 aC. Th:		a Gir	r fåg i fli	r aad : Lys	gh ,
at Me 29	t Va.	t odd I Pro	a gad o Glu	a gad u Asj	o gg: p Gl: 30	λ var∈	dd a Gl	a diy y Val	: tg: L Cy:	: 400 s Gl; 30	4	· d·d o Va	l Cyr	s Ala	e dca Ala 310	965
gg G:	t gg y Gl	g de y Pr	d tgg o Try	g gc p Al- 31	či (τ.	a gto : Va	ad L Ar	a gar g Asi	t td p Se 32		g ac g Th	g tt r Ph	c aca e Th	a cto r Les bli	g gtc : Val	1013

Leu	Il≎ 360	Gln	Gln	Gly	Ser	Lvs : 365	Ser	Ile 1	Pro	Pro	Phe 370	Gln	Glu	Pro	Leu	
gaa Glu 375	gtg Val	gly ggg	gag Glu	aac Asn	gac Asp 380	agt Ser i	tta Leu	agc (Ser (cag Gln	tgt Cys 385	ttc Phe	acc Thr	ggg Gly	act Thr	gaa Glu 390	1205
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act Thr	gac Asp	tct Ser	atg Met 410	ccc Pro	gtg Val	tcc Ser	cct Pro	gaa Glu 415	aag Lys	cac His	ctg Leu	aca Thr	aaa Lys 420	gaa Glu	ata Ile	1301
gaa Glu	ggt Gly	gac Asp 425	agt Ser	tgc Cys	ctc Leu	ccc Pro	tgg Trp 430	gtg Val	gtc Val	agc Ser	tcc Ser	aac Asn 435	tca Ser	aca Thr	gat Asp	1349
ggc Gly	tac Tyr 440	aca Thr	ggc Gly	agt Ser	Gly ggg	aac Asn 445	act Thr	cct Pro	ggg Gly	yaÿ Glu	gac Asp 450	cat His	gaa Glu	ccc Pro	ttt Phe	1397
cca Pro 455	ggg	tcc Ser	ctg Leu	aaa Lys	tgt Cys 460	gga Gly	cca Pro	ttg Leu	ccc Pro	cag Gln 465	· 1	gcc Ala	tac Tyr	agc Ser	atg Met 470	1445
		ccc Pro	agt Ser	gaa Glu 475	. Ala	gca Ala	gcc Ala	agc Ser	atg Met 480		gag Glu	g gcg 1 Ala	gga Gly	gta Val 485	cgg Arg	1493
cco Pro	caç Glr	gac Asp	agg Arg 490	l VI9	gat Asp	gag Glu	agg Arg	gga Gly 495	1110	tca Ser	ggg Gly	g tcc 7 Ser	ggg Gly 500	g ago , Ser)	tcc Ser	1541
cco Pro	c agt o Sei	gad Asp 505	c cas		a cct D Pro	gcc Ala	tct Ser 51(_ GIY	aac Asr	gtg n Val	g act L Thi	t gga r Gly 515	a aac / Asr	agt n Sei	aac Asn	1589
tc Se	c acg r Th: 52	g tto r Pho		c tat e Sei	t ago r Sei	ggg Gly 525	GII	g gtg n Val	ato Me	g aad t Asi	e tito n Pho 53	_	g ggt s Gly	t gad y Asj	c atc p Ile	1637
at :1 53	c gt e Ya		g ta l Ty	t gte r Va	c agr 1 Se 54	r Gii	g aco n Th	c tco r Sei	c Gl	g ga n Gl 54		a ga y Pr	o Gl. a da	t to y Se	c gca r Ala 550	1685
		c ja o Gl	g tc u Se	g ga r Gl 55	u Pr	e gu o Va	g gg 1 Gl	q cg(y Arg	e ec g Pr 56		g ra 1 Gl	a ga n Gl	g ga u Gl	g ac u Th 56	q ata r Leu 5	1733
gc A l	a ca .a Hi	c ag s Ar	ra ga rg As 57	c tc p Se		t go e Al	g gg a Gl	c ac y Th 57	1 1 1 1	g cc a Pr	g cg o Ar	gc tt rg Ph	c cc le Pr 58	c ga o As	c gtc p Val	1781
			5 1	5												.000

and the second of the second o

Leu His Thr Gln Gly Ser Gly Gln Cys Ala Glu 615 620 625

geoctgggtg eagggeacea gtgeetttee aaaaacatgg tgtagetage eaetgtgeae 1990 etecteactg gtgeaggetg etggeatggt gatggageee aceteteaet teeteeagtg 2050 eeeeteteet etgeeteeta e 2071

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Ala Leu Cys Val Leu Leu Val Pro Leu Gln Val Thr Leu Gln Val Thr

Pro Pro Cys Thr Gln Glu Arg His Tyr Glu His Leu Gly Arg Cys Cys 35 40 45

Ser Arg Cys Glu Pro Gly Lys Tyr Leu Ser Ser Lys Cys Thr Pro Thr 50 55

Ser Asp Ser Val Cys Leu Pro Cys Gly Pro Asp Glu Tyr Leu Asp Thr

Trp Ash Glu Glu Asp Lys Cys Leu Leu His Lys Val Cys Asp Ala Dy 85 95

Lys Ala Leu Val Ala Val Asp Pro Gly Asn His Thr Ala Pro Arg Arg 100 105

dus Ala Cys Thr Ala Gly Tyr His Trp Ash Ser Asp Cys Glu Cys Cys

the color Ameliya Acquire the the type in the Type Two is a by the tipe

Ser Asp Val Phe Ser Ser Thr Asp Lys Cys Lys Pro Trp Thr Asn Cys 165

Thr Leu Leu Gly Lys Leu Glu Ala His Gln Gly Thr Thr Glu Ser Asp 180 185

Val Val Cys Ser Ser Ser Met Thr Leu Arg Arg Pro Pro Lys Glu Ala

Gln Ala Tyr Leu Pro Ser Leu Ile Val Leu Leu Leu Phe Ile Ser Val 210 215 220

Val Val Val Ala Ala Ile Ile Phe Gly Val Tyr Tyr Arg Lys Gly Gly 225 230 235

Lys Ala Leu Thr Ala Asn Leu Trp Asn Trp Val Asn Asp Ala Cys Ser 245 250 255

Ser Leu Ser Gly Asn Lys Glu Ser Ser Gly Asp Arg Cys Ala Gly Ser 260 265 270

His Ser Ala Thr Ser Ser Gln Gln Glu Val Cys Glu Gly Ile Leu Leu 275 280 285

Met Thr Arg Glu Glu Lys Met Val Pro Glu Asp Gly Ala Gly Val Cys 290 295 300

Gly Pro Val Cys Ala Ala Gly Gly Pro Trp Ala Glu Val Arg Asp Ser 305 310 315

Arg Thr Phe Thr Leu Val Ser Glu Mal Glu Thr Gln Gly Asp Leu Ser 325

Arg Lys lle Pro Thr Glu Asp Glu Tyr Thr Asp Arg Pro Ser Glm Pro 345

Ser Thr Gly Ser Leu Leu Leu Ile Gln Gln Gly Ser Lys Ser Ile Pro 355

pro Pho die d'u pro les Glu Val Gly Glu Ash Asp Ser Leu Ser Gln

esson, no 18 non Armini Aig Der Dit Institut Jen In High 178

His Leu Thr Lys Glu Ile Glu Gly Asp Ser Cys Leu Pro Trp Val Val 420 425 430

Ser Ser Asn Ser Thr Asp Gly Tyr Thr Gly Ser Gly Asn Thr Fro Gly 435

Glu Asp His Glu Pro Phe Pro Gly Ser Leu Lys Cys Gly Pro Leu Pro
450 460

Gln Cys Ala Tyr Ser Met Gly Phe Pro Ser Glu Ala Ala Ala Ser Met 465 470 480

Ala Glu Ala Gly Val Arg Pro Gln Asp Arg Ala Asp Glu Arg Gly Ala
485
490

Ser Gly Ser Gly Ser Pro Ser Asp Gln Pro Pro Ala Ser Gly Asn 500 505

Val Thr Gly Asn Ser Asn Ser Thr Phe Ile Ser Ser Gly Gln Val Met 515 520

Asn Phe Lys Gly Asp Ile Ile Val Val Tyr Val Ser Gln Thr Ser Gln
530
540

Glu Gly Pro Gly Ser Ala Glu Pro Glu Ser Glu Pro Val Gly Arg Pro 545 550 560

Val Glu Glu Thr Leu Ala His Arg Asp Ser Phe Ala Gly Thr Ala 565 570 575

Pro Arg Phe Pro Asp Val Cys Ala Thr Gly Ala Gly Leu Gln Glu Gln 580 580

Gly Ala Pro Arg Gln Lys Asp Gly Thr Ser Arg Pro Val Gln 500 Gln 595

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The Symmetric Librarians

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· 210 - 53

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Lys Leu Val Thr Leu Gln Val Thr Pro $\hat{1}$